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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/749,230 | 12/30/2003 | Jin-Hyuck Heo | 11038-130-999 | 9667 |

24341 7590 10/21/2004

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EXAMINER

BURCH, MELODY M

ART UNIT PAPER NUMBER

3683

DATE MAILED: 10/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/749,230

Applicant(s)

HEO, JIN-HYUCK

Examiner

Melody M. Burch

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[Signature]

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 10 is/are rejected.
- 7) ☐ Claim(s) 7-9, 11 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/30/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the vehicle body claimed in line 2 of claim 2 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1-12 are objected to because of the following informalities: the phrase "plurality of holes" in line 14 of claim 1 should be changed to --plurality of valve holes-- to maintain consistency; in line 10 of claim 11 the phrase "said groove" should be changed to --said at least one groove-- to maintain consistency; it is noted that the phrase "at least one valve hole defines at least a second opening different from the first opening" is not possible if the at least one valve hole equals one valve hole. Examiner recommends changing "at least one valve hole" to --plurality of valve holes-- similar to the recitation in claim 1. Appropriate correction is required. The remaining claims are objected to due to their dependency from claims 1 and 11.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 967285 to Wilson.

Re: claims 1 and 5. Wilson shows in figures 1, 4, and 5 a damping-force variable

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shock absorber comprising: a cylinder A having an inner wall; a piston rod J having a proximal end and a distal end, the piston rod being mounted inside said cylinder and configured for linear movement relative to said cylinder, an orifice valve plate B having a plurality of valve holes b4, the orifice valve plate being configured and mounted about said piston rod such that said plurality of valve holes form a circle about said piston rod; a rotary valve plate h4 having a plurality of radially-protruding projections h8, said rotary valve plate being mounted about said piston rod so as to be rotatable with respect to said piston rod and said orifice valve plate, said rotary valve plate having a first rotating state with respect to said orifice valve plate such that said plurality of valve holes define a first opening, said rotary valve plate having at least a second rotating state with respect to said orifice valve plate such that said plurality of holes define at least a second opening different from the first opening; and a guide means H for rotating said rotary valve plate between said first rotating state and said at least second rotating state relative to said orifice valve plate, the guide means H being between (the top side of the) rotary valve plate and (the bottom side of the) cylinder as shown in figure 4.

6. Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 2148891 to Applegarth.

Re: claims 1, 4 and 5. Applegarth shows in figures 1-3 a damping-force variable shock absorber comprising: a cylinder 10,13,14 having an inner wall; a piston rod 11 having a proximal end and a distal end, the piston rod being mounted inside said cylinder and configured for linear movement relative to said cylinder, an orifice valve plate 18 having a plurality of valve holes shown between the two projection portions (as

best seen in figure 2), the orifice valve plate being configured and mounted about said piston rod such that said plurality of valve holes form a circle about said piston rod; a rotary valve plate 20 having a plurality of radially-protruding projections as shown in figure 3, said rotary valve plate being mounted about said piston rod so as to be rotatable with respect to said piston rod and said orifice valve plate (via rotation of the nut 21), said rotary valve plate having a first rotating state with respect to said orifice valve plate such that said plurality of valve holes define a first opening, said rotary valve plate having at least a second rotating state with respect to said orifice valve plate such that said plurality of holes define at least a second opening different from the first opening; and a guide means 21 for rotating said rotary valve plate between said first rotating state and said at least second rotating state relative to said orifice valve plate, the guide means 21 being between (the bottom of the) rotary valve plate and (the bottom of the) cylinder as shown in figure 1.

Re: claim 2. Applegarth shows in figure 1 the limitation wherein the piston rod is secured to a vehicle body 15, as broadly claimed (a vehicle is broadly defined as “a means of carrying...something or a medium through which something is displayed” – see Webster’s Collegiate Dictionary 10th Edition), the shock absorber further comprising a rotation restriction means 16,17 for restricting rotary movement of the piston rod relative to the vehicle body, the rotation restriction means being mounted between the piston rod and the (the right portions of the) vehicle body.

Re: claim 3. Applegarth shows in figure 1 the limitation wherein at least a portion of the piston rod defines a circular cross-section and the rotary restriction means

comprises a key contact surface or the inner thread portion of portion 16 of the rotation restriction means formed at the distal end of the piston rod.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of US Patent Application 2003/0166432 to Patzer et al.

Wilson describes the invention substantially as set forth above, but does not include the limitation of the shock absorber comprising a bearing interposed between the rotary valve plate and the piston rod and a snap ring engaged with the piston rod for preventing linear movement of the rotary valve plate along the piston rod.

Patzer et al. teach in figure 1 the use of a radial bearing 32 interposed between a rotating and non-rotating object and a snap ring 30 used to limit linear movement of objects. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the absorber of Wilson to have included a bearing between the piston rod and the rotary valve plate to provide a low-friction means to facilitate rotation. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the linear movement restricting arrangement of Wilson to have included a snap ring at the bottom of the rod, in view of the teachings of Patzer et al., in order to limit linear movement of the rotary valve plate.

9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson in view of US Patent 4757884 to Fannin et al.

Wilson describes the invention substantially as set forth above, but fails to include the limitation of the orifice valve plate including a ring-shaped cushion part made of cushioning material, the cushion part extending distally.

Fannin et al. teach in figure 2 the use of a plate 92,153 including a ring-shaped cushion part 155 made of a cushioning material, the cushion part extending distally.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the area above the orifice valve plate of Wilson to have included a cushion part, as taught by Fannin et al., in order to provide a means of damping the movement of the orifice plate.

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applegarth in view of US Patent 4757884 to Fannin et al.

Applegarth describes the invention substantially as set forth above, but fails to include the limitation of the orifice valve plate including a ring-shaped cushion part made of cushioning material, the cushion part extending distally.

Fannin et al. teach in figure 2 the use of a plate 92,153 including a ring-shaped cushion part 155 made of a cushioning material, the cushion part extending distally.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the area above the orifice valve plate of Applegarth to have included a cushion part, as taught by Fannin et al., in order to provide a means of damping the movement of the orifice plate.

Allowable Subject Matter

11. Claims 7-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Claims 11 and 12 would be allowable if rewritten or amended to overcome the objection(s) set forth in this Office action.

The prior art fails to teach the limitation of the rotary valve having a projection to be engaged with guide grooves in the inner wall of the cylinder.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 4673067 to Munning et al., 5295705 to Butsuen et al., 5360089 to Nakamura et al., and JP-533823 teach similar shock absorber devices including rotary valve plates or objects.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on 703-308-3421. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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October 16, 2004

Melody M. Burch
10/16/04